

## ***Rio Blanco Monitoring Results***

### **Federal RG 24–13–398**

**Well:** Gas production well, Federal RG 24–13–398, API # 05–103–10702.

**Operator:** Williams Production RMT, Incorporated

**Sampler:** U.S. Department of Energy, Office of Legacy Management, Grand Junction, CO.

**Date of Sampling Event:** 7 January 2009

Samples of natural gas and produced water were collected from production well Federal RG 24–13–398.

Location data for the surface collection point and the sample location are given in Table 1. A description of each sample collected is listed in Table 2.

*Table 1. Well Federal RG 24-13-398, API # 05–103–10702*

Sample Point Location	Location	Sample Location						
		Sea Level elevation (feet)	Distance (feet) from		Surface		Distance from GZ (miles)	Heading from GZ (deg)
			N-S Section line	E-W Section line	Latitude (NAD 27)	Longitude (NAD 27)		
<b>Surface</b>	SESW S13 T3S R98W	7,087.9	750' FSL	2382' FWL	39.783901	-108.342901	1.42	E29.0°S
<b>Subsurface</b>	SESW S13 T3S R98W	-2,363.6	750' FSL	2382' FWL	39.783901	-108.342901	1.42	E29.0°S

Location data updated 12 February 2009.

NA: not available

The subsurface elevation is at the bottom of the well.

**Link** to Colorado Oil and Gas Conservation Commission information about well Federal RG 24–13–398:

<http://oil-gas.state.co.us/cogis/FacilityDetail.asp?facid=10310702&type=WELL>

Table 2. Sample Description

Sample Ticket No.	Location			Field Sample Matrix	Analytes	Samp Vol. (L)	Comments
	Name	Type	Sub-type				
HCV 696	RG 24-13-398	WL	NGAS	Dewatered gas	3H, 14C	17.8	Sample collected between the separator tank and the accumulation tank. Wellhead pressure is 440 psi; sample pressure is about 30 psi.
HCV 692	RG 24-13-398	TS	TINT	Water	Gamma Spec	2	Collected using a temporary valve installed at the output of the separator.
HCV 692	RG 24-13-398	TS	TINT	Water	36Cl, 3H, Cl <sup>-</sup>	1	Collected using a temporary valve installed at the output of the separator.
HCV 692	RG 24-13-398	TS	TINT	Water	Gross α/β	0.5	Collected using a temporary valve installed at the output of the separator.

WL: well      NGAS: natural gas      TINT: treatment system internal location      psi: pounds per square inch

3H: tritium      14C: carbon 14      36Cl: chlorine 36      Cl<sup>-</sup>: chloride

Gross α/β : gross alpha and gross beta analyses      Gamma Spec: high-resolution gamma spectroscopy

The water sample was submitted to GEL Laboratories, Charleston, South Carolina, for the analysis by gross alpha, gross beta, high resolution gamma spectroscopy, and analyses of chloride, chlorine 36, and tritium. The results are listed in Table 3.

The natural gas sample was submitted to Isotech Laboratories in Champaign, Illinois, for natural gas analysis and the determination of tritium and carbon-14. The gas analysis results are listed in Table 4.

Table 3. Water Sample HCV 692 Results, Gel Laboratory

**RESULTS REPORT**

**RIN: 09012046**

**Site: Rio Blanco Site**

**Location: Federal RG 24-13-398**

**Ticket Number: HCV 692**

**Report Date: 3/3/2009**

Parameter	Units	Sample Date	Sample ID	Result	Lab	Qualifiers Data	QA	Standard <sup>1</sup>
H-3	pCi/L	01/07/2009	N001	28.1	U			20,000
Actinium-228	pCi/L	01/07/2009	N001	0.00	UI			
Americium-241	pCi/L	01/07/2009	N001	-4.85	U			
Antimony-125	pCi/L	01/07/2009	N001	-1.63	U			
Cerium-144	pCi/L	01/07/2009	N001	2.94	U			
Cesium-134	pCi/L	01/07/2009	N001	0.933	U			
Cesium-137	pCi/L	01/07/2009	N001	-0.324	U			
Cobalt-60	pCi/L	01/07/2009	N001	0.377	U			
Europium-152	pCi/L	01/07/2009	N001	1.83	U			
Europium-154	pCi/L	01/07/2009	N001	1.98	U			
Europium-155	pCi/L	01/07/2009	N001	-0.848	U			
Lead-212	pCi/L	01/07/2009	N001	0.537	U			
Potassium-40	pCi/L	01/07/2009	N001	122				
Promethium-144	pCi/L	01/07/2009	N001	0.248	U			
Promethium-146	pCi/L	01/07/2009	N001	0.415	U			
Ruthenium-106	pCi/L	01/07/2009	N001	-2.59	U			
Thorium-234	pCi/L	01/07/2009	N001	-90.9	U			
Uranium-235	pCi/L	01/07/2009	N001	4.86	U			
Yttrium-88	pCi/L	01/07/2009	N001	-90.9	U			
GROSS ALPHA	pCi/L	01/07/2009	N001	14.0	U	J		
GROSS BETA	pCi/L	01/07/2009	N001	118		J		
Chloride-36	pCi/L	01/07/2009	N001	153	U	J		
CHLORIDE	mg/L	01/07/2009	N001	5310				

<sup>1</sup> USEPA Primary Radionuclide Drinking Water Standard.

Table 4. Natural Gas Sample HCV 696 Results, Isotech Laboratories

**RESULTS REPORT**

**RIN: 09012048**

**Site: Rio Blanco Site**

**Location: Federal RG 24-13-398**

**Ticket Number: HCV 696**

**Report Date: 3/3/2009**

Parameter	Units	Sample		Result	Qualifiers			Standard <sup>2</sup>
		Date	ID		Lab	Data	QA	
Helium	percent	01/07/2009	N001	0.0020				
Hydrogen	percent	01/07/2009	N001	0.0020				
Argon	percent	01/07/2009	N001	nd <sup>1</sup>				
Oxygen	percent	01/07/2009	N001	nd <sup>1</sup>				
Nitrogen	percent	01/07/2009	N001	0.012				
Carbon Dioxide	percent	01/07/2009	N001	7.25				
Methane	percent	01/07/2009	N001	87.57				
Ethane	percent	01/07/2009	N001	4.10				
Propane	percent	01/07/2009	N001	0.637				
Isobutane	percent	01/07/2009	N001	0.163				
Butane	percent	01/07/2009	N001	0.103				
Isopentane	percent	01/07/2009	N001	0.0499				
Pentane	percent	01/07/2009	N001	0.0289				
Hexanes	percent	01/07/2009	N001	0.842				
Carbon-14	Percent modern carbon	01/07/2009	N001	0.3	U			
Tritium	pCi/L methane	01/07/2009	N001	0.0514	U			

<sup>1</sup> Not detected.

<sup>2</sup> There are no applicable standards for natural gas.

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

**LAB QUALIFIERS:**

U Analytical result below detection limit.

**DATA QUALIFIERS:**

F Low flow sampling method used.

G Possible grout contamination, pH > 9.

J Estimated value.

L Less than 3 bore volumes purged prior to sampling.

Q Qualitative result due to sampling technique.

R Unusable result.

U Parameter analyzed for but was not detected.

X Location is undefined.

**QA QUALIFIER:**

# Validated at Level 1 according to quality assurance guidelines.